

REMARKS

Claims 1 - 9 and 30 - 49 are in the application and are presented for consideration. Withdrawn claims 10 - 29 have been canceled in favor of new claims 30 - 49 subject to Applicant's right to cover the subject matter in a Divisional Application. Of the new claims, at least claim 44 and claim 49 are directed to a non-elected species of the invention. It is noted that the total number of independent claims and total number of claims is less than or the same as originally presented such that no fee is due. Applicant attaches the necessary government fee for the one month extension of time.

The drawings have been objected to because of crosshatching. Applicant has proposed replacement sheets noting the corrections. Approval of these corrections is requested.

The Abstract of the Disclosure has been objected to. Applicant has removed the term "invention" and otherwise made other minor changes to improve the form of this text.

The claims have been objected to because of informalities. Applicant has revised the claims paying close attention to the Examiner's comments. It is Applicant's position that all issues have been addressed. Applicant wishes to thank the Examiner for the careful reading of the claims and for the helpful comments.

Claims 1 - 4, 7 and 8 have been rejected as being anticipated by Schutt et al. (U.S. 5,611,635). The rejection is based on the consideration that Schutt et al. discloses a bearing shell which is a plastic molded part and has contact with an inner surface of a metal housing 1 as well as a lower end face of the metal housing 1. As such, this is considered contact with an inner surface and an outer surface of the metal housing 1. Applicant notes that Applicant has

now clarified the claims with regard to the novel aspects of Applicant's invention which differ from the prior art as a whole including Schutt et al.

Schutt et al. discloses a ball joint comprising a housing 1 provided with an opening 1a and a Gudgeon 2 arranged in a ball socket 3 made of plastic. In the assembled condition, an annular shoulder 3c of the ball socket 3 adjoins the underside of the housing 1. The Schutt et al. reference fails to teach and fails to disclose the housing covered by molded material of the ball socket on its inner peripheral surface and on its outer peripheral surface. According to Schutt et al. only the inner peripheral surface and the lower front edge surface of the housing 1 are covered by the material of the ball socket 3.

Applicant has emphasized the novel and important characteristics of Applicant's invention claim 1 pointing out that the housing part has an outer peripheral surface at the outside of the housing part which extends from the top end edge to the pivot pin opening edge and has an inner peripheral surface at an inside extending from the top end edge to the pivot pin opening edge. These surfaces not only have molded material on them but also the molded material define functional surfaces on an inside and an outside of the housing part. There is no suggestion in the Schutt et al. reference to provide molded material on the outer peripheral surface of the housing part, namely the surface which extends from the top end edge, namely adjacent to the top opening to the pivot pin edge, namely part of the housing which eventually is to the outside of the entire ball and socket joint construction. Applicant's invention provides significant advantages with regard to manufacturing and provides the functional surface on the outside of the housing part, namely a groove for receiving a bellows seal element. Schutt et al.

on the other hand discloses a bearing shell for the inside of the housing part which includes a flange extending downwardly with a part braced against the bottom edge of the housing part wherein the flange traps the bellows seal between itself and the bottom edge of the housing part. The difference is significant in practice and Schutt et al. does not suggest how such a molded part outer seat surface, on the outer surface of the housing part, as defined in the claim, can be provided and does not suggest any advantage to doing such. However, Schutt et al. relies on a trapping of the structure and does not suggest a bellows seat surface or other functional surface on the outside defined radially outwardly of the outer periphery of the housing. Accordingly, Applicant respectfully requests that the Examiner favorably consider amended claims 1 and claims depending thereon.

The Schutt et al. reference also fails to teach and fails to suggest a ball joint with molded material defining a groove with the housing edge or end engaged in a region of the molded material part having the groove. Specifically, with the invention, the groove portion or surface defined by the molded material (and defined by the support of the housing part) is such that the end or pivot pin opening edge of the housing part engages or is arranged in the groove region of this material. This can be appreciated for example from Fig. 13 which shows an outer groove surface or seat for a bellow seal which is in a region of the molded part with the edge or end of the housing part extending into it. Although the housing part or edge need not be fully covered with the material as in the embodiment of Fig. 13 the groove structure with housing part edge inserted into the molded part region provides particular advantages as to support and robust functionality during use. This differs significantly from the Schutt et al.

reference which relies on a simple trapping of the bellows end in a seat which is basically opposite to the bottom edge of the housing 1 (to form the trapping action). Although the wrapping or extension of the bearing shell of Schutt et al. over the bottom edge does provide some leverage support, Schutt et al. does not teach nor suggest the combination of features of new claim 30 and instead directs the person of ordinary skill in the art toward a different construction and different concepts, namely the trapping concept leverage from the bottom edge. Applicant's structure uses the bottom edge or end of the housing extending into the region of the molded part which forms the groove, providing ease of manufacture as well as allowing a seat to be provided with good mechanical attributes. With the invention, the bellows seal is seated pressed radially inwardly, namely the material is built up off of the housing edge allowing a seat which has the strength of the housing part, the surface provided by the molded material with this being of a molded material part with functional portions on the outside and inside of the housing part.

Claim 31 highlights the above features mentioned in claim 30 and further the housing part being covered by the molded material on its inner peripheral surface and outer peripheral surface (namely the end of the housing part is arranged between the molded material) with the molded material extending outwardly or in a radial direction of the housing part, which molded material defines the groove surface. With this the end of the housing part is embraced by the molded material in both radial directions whereby a radial form fit surface can be provided.

New claim 32 highlights the feature that a groove defines a curved portion, namely curved along an axial extent. Schutt et al. does not disclose a curve along an axial extent and

instead provides a pocket trapping the bellows edge between the material of the bearing shell and the bottom edge of the housing.

Applicant's new claim 33 highlights the structure that the groove is annular or ring-shaped. New claim 34 highlights that the molded material part is a single integral structural element.

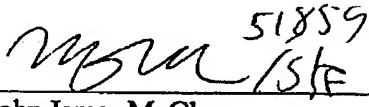
New claim 35 is directed to the groove being curved in the axial direction of the housing part. New claims 36 - 40 highlight further aspects of the combination of claim 30 or claim 1.

New claim 41 is similar to revised claim 1 and further highlights that the molded material forms at least part of the bearing shell on the inside of the housing part and a groove on the outside of a housing part with the groove surface being defined by a bent or curved portion of the housing part cooperating with the molded material on the housing part outer surface. The material itself may define the basic contour of the curve but the curved or bent housing part provides functional and structural stability in providing the curve along the axial extent of the groove. This structure is clearly neither taught nor suggested by Schutt et al. Claims 42 - 49 highlight further aspects of this combination.

Accordingly, it is Applicant's position that the claims define the combination of features which is neither taught nor suggested by the prior art. Further, these features are structural and are not in the nature of process features. Applicant notes that the original rejection makes some reference to product-by-process claims wherein it is the structure which is considered and not the manner of formation. However, it is not clear to Applicant that the manner of formation is being claimed particularly. With regard to this original language form and "functional

surfaces" this is not directed to the method of formation in any way but is instead relating to the functional surfaces which are formed. In the context of the claims as now presented, the prior art clearly fails to teach and clearly fails to suggest the combination of features. Accordingly, reconsideration of the rejections in view of the new claims and revised claims and in view of the discussion above is requested.

Respectfully submitted
for Applicant,

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Enclosed: Abstract of the Disclosure
Petition for One Month Extension of Time

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SHOULD ANY OTHER FEE BE REQUIRED, THE PATENT AND TRADEMARK OFFICE
IS HEREBY REQUESTED TO CHARGE SUCH FEE TO OUR DEPOSIT ACCOUNT 13-
0410.

ABSTRACT OF THE DISCLOSURE

~~The invention pertains to a~~ A ball-and-socket joint for motor vehicles ~~[[,]]~~ is provided
with a joint ball and a pivot pin, a housing part formed of a shaped metal tube having a top end
with an opening and having an opposite end with a pivot pin opening through which the pivot
pin protrudes. ~~and with a~~ A molded material is molded on a portion of the housing, the
5 molded on material forming functional surfaces on each of an inside and an outside of the
housing part.